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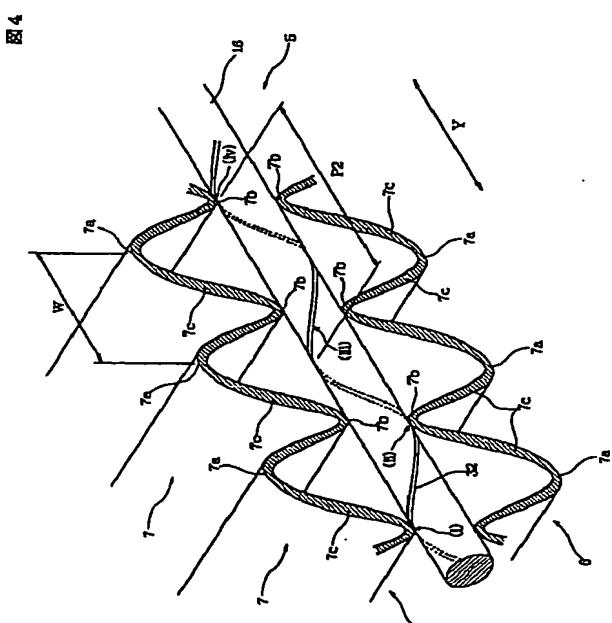
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(54)【発明の名称】 吸収性物品

(57)【要約】

【課題】 凹凸皺を有する不織布で吸収性物品の防漏壁を形成し、この不織布に弾性部材を接着すると、波の頂部や中間部が弾性部材に接着されて、前記凹凸皺が潰れたまま固まり、肌への当りが硬くなる。

【解決手段】 吸収性物品の防漏壁として波状の凹凸皺7を有する不織布6が使用される。この不織布6に弾性部材16が接着される。接着剤32は、弾性部材16の周囲に螺旋軌跡となるように塗布される。前記凹凸皺7の底部7bは前記接着剤32により弾性部材16の表面に接着される。接着剤32は長手方向に間隔を開けて現れるので、凹凸皺7の頂部7aや中間部7cの内面が接着剤32に当りにくく、よって凹凸皺7が潰れて接着固定されることがない。



【特許請求の範囲】

【請求項1】 受液側の表面に設けられた液透過性の表面シートと、裏面シートと、前記両シート間に挟まれた吸收層と、前記表面の両側で縦方向に延びる防漏壁と、が設けられた吸収性物品において、前記防漏壁は、波の頂部と底部が縦方向に交互に繰り返す波形状の不織布で形成され、この不織布に前記縦方向に延び且つ縦方向へ収縮力を発揮する弾性部材が取付けられており、前記弾性部材の表面には前記縦方向に接着剤が間隔を開けて塗布されており、前記波形状の底部が前記接着剤により前記弾性部材に接着されていることを特徴とする吸収性物品。

【請求項2】 前記接着剤の塗布形態は帯状または線状であって、この帯状または線状の接着剤が、弾性部材の軸方向へ連続し、しかも弾性部材の表面において軸方向に延びる任意の線を設定したときに、この線状に前記接着剤が軸方向に間隔を開けて規則的にまたはランダムに現れる請求項1記載の吸収性物品。

【請求項3】 前記弾性部材の表面において、前記接着剤は、前記縦方向と交叉する方向が振幅側となる波状軌跡に沿って塗布されている請求項2記載の吸収性物品。

【請求項4】 前記弾性部材の表面において、前記接着剤は、前記弾性部材の周囲を周回しながら前記縦方向に進む螺旋軌跡となるように塗布されている請求項2記載の吸収性物品。

【請求項5】 前記接着剤の波状軌跡の周期または前記螺旋軌跡の周期が、前記不織布の波形状の周期よりも長い請求項3または4記載の吸収性部品。

【請求項6】 前記不織布が前記防漏壁の先端で折り返されて、前記防漏壁が折り返された2枚の不織布で構成されており、前記弾性部材は、2枚の不織布の間に位置して、その両側の不織布の波状の底部がそれぞれ前記接着剤により前記弾性部材に接着されている請求項1ないし5のいずれかに記載の吸収性物品。

【発明の詳細な説明】**【0001】**

【発明の属する技術分野】 本発明は、生理用ナプキン、使い捨ておむつなどの吸収性物品に係り、特に両側に縦方向に延びる防漏壁が設けられた吸収性物品に関する。

【0002】

【従来の技術】 従来、生理用ナプキン、尿取りパッド、使い捨ておむつなどの吸収性物品が種々開発されている。これらの吸収性物品では、着用中において排泄液を液吸収層で確実に吸収し、排泄液が吸収性物品の外へ漏れないようにすることが求められる。そこで、吸収性物品の受液側表面において両側に縦方向に延びる防漏壁を形成したものがある。

【0003】 従来の前記防漏壁の構造は、吸収性物品の表面シート上に縦方向に延びる非伸縮性の疎水性シートが接合されており、この疎水性シートに、吸収性物品の

縦方向に延びる弾性部材が接合されたものが一般的である。前記弾性部材の縦方向の弾性収縮力により、吸収性物品に縦方向に向かう湾曲力が作用するとともに、前記防漏壁が吸収性物品の受液側に立ち上がり、これにより経血などの横漏れを防止できるようにしている。

【0004】

【発明が解決しようとする課題】 しかし、前記従来の吸収性物品の前記防漏壁は、装着者の肌に当たる側が平坦なものが多く、装着者の肌への密着感があり、また当接感触が硬く、肌に柔らかく当たることができないものが多い。

【0005】 また、波状に変形(賦型)させた不織布で防漏壁を形成したものがあり、この種の防漏壁は装着者の肌への接触面積が低下し、肌にソフト感を与えることができる。この種の防漏壁は例えば特表平9-503934号公報に開示されている。しかし、前記公報に記載のものは、防漏壁自体が弾性力を有するように成形されたものであるため、防漏壁自体の剛性が低く、例えば吸収性物品の表面から立ち上がるようになに設置したときに、防漏壁の座屈強度をあまり高くできない。

【0006】 また、波状に変形(賦型)させた不織布に、縦方向に延びる弾性部材を接合すると、吸収性物品の受液側からの立ち上がり力が大きくなり、倒れ難いものとなる。しかし、波状の不織布に縦方向に延びる弾性部材をホットメルト型の接着剤などで接着すると、不織布に加圧力が作用したときに波の頂部側が前記接着剤に接着されてしまい、不織布の波が潰された状態となりやすい。その結果、弾性部材が接着されている部分で不織布が硬くなり、肌への接触感触が悪くなる。

【0007】 本発明は上記従来の課題を解決するものであり、肌への当たりが柔らかい防漏壁を実現でき、しかも防漏壁を形成する不織布と弾性部材との接着部が硬くならず、ソフト感を損なわない吸収性物品を提供することを目的としている。

【0008】

【課題を解決するための手段】 本発明は、受液側の表面に設けられた液透過性の表面シートと、裏面シートと、前記両シート間に挟まれた吸收層と、前記表面の両側で縦方向に延びる防漏壁と、が設けられた吸収性物品において、前記防漏壁は、波の頂部と底部が縦方向に交互に繰り返す波形状の不織布で形成され、この不織布に前記縦方向に延び且つ縦方向へ収縮力を発揮する弾性部材が取付けられており、前記弾性部材の表面には前記縦方向に接着剤が間隔を開けて塗布されており、前記波形状の底部が前記接着剤により前記弾性部材に接着されていることを特徴とするものである。

【0009】 本発明の吸収性物品では、前記防漏壁を形成する不織布が波状に成型(賦型)されているものであるため、装着者の肌への接触面積を低減でき、肌への密着感がなく、当たりがソフトである。また縦方向に収縮力

を発揮する弾性部材が防漏壁に接合されているため、防漏壁に縦方向への収縮力が作用し、その結果吸収性物品が縦方向へ湾曲して前記防漏壁が立ち上がりやすくなる。そして、前記弾性部材には接着剤が縦方向に間欠に形成されているため、不織布の波の底部以外の内面が前記接着剤に接触しにくくなり、波が潰れにくく、また弾性部材が設けられている部分で不織布が接着剤で固まることなく、ゴワゴワした接触感触を与えることがなく、ソフト感を維持できる。

【0010】好ましくは、前記接着剤の塗布形態は帯状または線状であって、この帯状または線状の接着剤が、弾性部材の軸方向へ連続し、しかも弾性部材の表面において軸方向に延びる任意の線を設定したときに、この線状に前記接着剤が軸方向に間隔を開けて規則的にまたはランダムに現れるものである。

【0011】例えば、前記弾性部材の表面において、前記接着剤は、前記縦方向と交叉する方向が振幅側となる波状軌跡に沿って塗布されている。あるいは、前記弾性部材の表面において、前記接着剤は、前記弾性部材の周囲を周回しながら前記縦方向に進む螺旋軌跡となるように塗布されているものである。

【0012】また、前記接着剤の波状軌跡の周期または前記螺旋軌跡の周期が、前記不織布の波形状の周期よりも長いことが好ましい。

【0013】上記手段では、防漏壁を形成する不織布の波のピッチを細かくすることで、防漏壁を軟質にでき、しかも肌への当りを柔らかくできる。この場合に、接着剤の塗布周期を長くしておくと、前記不織布の波の底部以外の部分が接着剤に当たる確率を低くでき、波の潰れ防止効果を高くできる。また不織布の個々の底部を高い確率で接着剤により弾性部材に接着することができる。

【0014】さらに、前記不織布が前記防漏壁の先端で折り返されて、前記防漏壁が折り返された2枚の不織布で構成されており、前記弾性部材は、2枚の不織布の間に位置して、その両側の不織布の波状の底部がそれぞれ前記接着剤により前記弾性部材に接着されているものである。

【0015】なお、本発明は、防漏壁が1枚の波状の不織布で形成され、この不織布の波の底部に弾性部材が接着されているものであってもよい。

【0016】

【発明の実施の形態】図1は本発明の吸収性物品の一例として生理用ナプキンを示す斜視図、図2は図1のI—I—I—I線の部分断面図、図3と図4は、図2のIII—III線の断面を実施の形態別に示す断面図、図5は弾性部材と不織布との接着箇所を説明する断面図、図6は防漏壁を形成する不織布の製造工程の一例を示す斜視図である。

【0017】図1に示す吸収性物品1は生理用ナプキンであり、X方向が幅方向、Y方向が縦方向である。この

吸収性物品1は、前記中央部2を挟む領域が前方部3および後方部4である。吸収性物品1の両側部には、縦方向(Y方向)に延びる防漏壁5、5が設けられている。この防漏壁5、5には縦方向に弾性収縮力を発揮する弾性部材が取付けられており、この弾性収縮力により、吸収性物品1が縦方向(Y方向)に向って湾曲し、また主に前記中央部2において両側の防漏壁5、5が表面2aから立体形状に立ち上がる。

【0018】図2に示すように、吸収性物品1は、不透液性の裏面シート11の上に吸収性コア12が重ねられ、その上に透液性の表面シート13が重ねられている。前記吸収性コア12は、吸収性物品1の中央部2から前記前方部3と後方部4の一部にわたって設けられている。そして前記裏面シート11と表面シート13は、前記吸収性コア12よりも外側の外周領域で、互いにホットメルト接着剤で接着され、または熱エンボスにより融着接合されている。

【0019】前記吸収性コア12は、粉碎パルプとSAPとが混合されたもので、さらに液透過性の紙で包まれたもの、またはバインダー処理でシート化されたエアレイドパルプ、または吸収紙、あるいは親水性纖維を主体とした不織布などである。前記裏面シート11は非透液性であり、透湿性の樹脂フィルム、または不織布、あるいは樹脂フィルムと不織布とが接合されたものである。前記表面シート13は透液性であり、親水性纖維により形成された不織布または開口不織布、開口プラスチックフィルム、あるいは開口プラスチックフィルムと不織布とのラミネートシートなどで形成されている。

【0020】前記防漏壁5は、エアースルー不織布、ポイントボンド不織布、スパンボンド不織布、スパンレース不織布、メルトブロン不織布、エアレイド不織布などの不織布6で形成されている。また防漏壁5は、エチレン、ポリプロピレンなどのプラスチックシートと不織布をラミネートしたシートなどで形成されてもよい。いずれも疎水性または親水性であることが好ましい。前記不織布6を構成する纖維は疎水処理が施されたポリエチレン(PE)纖維、ポリエチレンテレフタレート(PET)纖維、またはPE/PPまたはPE/PETなどの複合纖維、すなわち芯鞘型纖維やサイドバイサイド型纖維などで形成される。好ましくは、前記防漏壁5は、纖度が1.1~4.4 dtexのPE/PP芯鞘型纖維で形成されたスパンボンド不織布6で形成され、目付けは15~40 g/m²である。

【0021】防漏壁5を形成する前記不織布6には、波形状の凹凸皺7が形成されており、防漏壁5では、前記凹凸皺7の波の頂部と底部が縦方向(Y方向)に交互に繰り返すように形成されている。

【0022】図6は、前記防漏壁5を形成する不織布6に波状の凹凸皺7および平坦領域8を形成するための熱プレス工程の説明図である。

【0023】この熱プレス工程で前記不織布6が、成形ロール21と22とで挟まれて熱プレスされる。成形ロール21と22は、互いに噛み合った状態で α 方向と β 方向へ回転する。成形ロール21の成形面は、ロールの軸方向に延びるストライプエンボス状の成形リブ23と溝24とが回転方向(α 方向)へ一定のピッチで繰り返して形成されている。また成形ロール21には、前記成形リブ23の上面と連続し且つ回転方向(α 方向)へ連続する凸周面25が形成されている。

【0024】他方の成形ロール22の成形面では、ロールの軸方向に延びるストライプエンボス状の成形リブ26と溝27とが回転方向(β 方向)へ一定のピッチで繰り返して形成されている。また成形ロール22には、溝27の底部に連続する凹周面28が回転方向(β 方向)に沿って連続して形成されている。

【0025】ロール間に不織布6が供給されながら、成形ロール21と成形ロール22とが噛み合って回転すると、成形ロール21の成形リブ23が成形ロール22の溝27内に、成形ロール22の成形リブ26が成形ロール21の溝24に入り込むように成形リブ23と26とが噛み合う。このとき成形ロール21の凸周面25が、成形ロール22の凹周面28内に噛み込む。

【0026】この連続成型により、不織布6に波状の凹凸皺7と平坦領域8とが同時に形成される。図3と図4に示すように成型後の不織布6は、波状の凹凸皺7の頂部7aと底部7bで纖維が強く圧縮され、中間部7cで纖維が軽く圧縮される。また頂部7aと底部7bの密度が、中間部7cの密度よりも高くなる。前記頂部7aおよび7bでの密度は $0 \cdot 1 \text{ g/cm}^3$ 以上が好ましい。また好ましい上限は $1 \cdot 0 \text{ g/cm}^3$ 以下である。

【0027】波状に形成された不織布6の凹凸皺7は、前記頂部7aの中点と隣接する頂部7aの中点との間の距離W(波状の周期)が $0 \cdot 5 \sim 3 \cdot 0 \text{ mm}$ 、頂部7aでのシート表面と底部7bでのシート裏面との間の高さ寸法Hは $0 \cdot 1 \sim 0 \cdot 5 \text{ mm}$ が好ましい。

【0028】図2に示すように、波形の凹凸皺7を有する不織布6は防漏壁5の自由端5aにおいて二つ折りして使用される。そして二つ折りされた不織布6の間に弹性部材14, 15, 16, 17が挟まれる。また、前記不織布6の一方の側端部6aは、吸收性物品1の両側部で、前記裏面シート11の上面に接着され、他方の側端部6bは、前記側端部6aと前記表面シート13との間で接着固定されている。

【0029】前記弹性部材14, 15, 16, 17は、ポリウレタン弹性糸、SEBSを主体とした成形フィルム、糸状の発泡体や天然ゴムを使用することができる。

【0030】例えば、前記波状に形成された不織布6を波の並ぶ方向(縦方向)へ、各弹性部材14, 15, 16, 17を1.3倍延ばした状態で、二つ折りされたそれぞれの前記不織布6で弹性部材14, 15, 16, 17を挟むようにして、不織布6と弹性部材14, 15, 16, 17を接着する。

【0031】図2に示す例では、防漏壁5の立ち上がり部分の途中に弹性部材14が位置し、その上の折り曲がり部に弹性部材15が位置し、自由端5aに弹性部材17が位置し、弹性部材15と弹性部材17との間に弹性部材16が位置している。前記弹性部材15, 16, 17が取付けられている平坦部が主に装着者の肌に当たる装着部分5bである。また、弹性部材15と弹性部材17が設けられている部分では、図6に示す不織布6の平坦領域8が前記弹性部材15と弹性部材16にホットメルト型接着剤などで接着されており、弹性部材15が設けられている部分では不織布6が折り曲がりやすく、弹性部材17が設けられている自由端5aでは不織布6が二つに折り畳みやすくなっている。

【0032】また、前記弹性部材14および弹性部材16は、不織布6の波状の凹凸皺7が形成されている部分でこの不織布6と接着されている。

【0033】図3と図4は図2のIII-I-II線の断面図である。図3に示す実施の形態では、前記弹性部材16は断面が円形または楕円形などの線材であり、その表面にホットメルト型接着剤31が帯状または線状の形態となるように塗布されている。前記ホットメルト型接着剤31の幅寸法は、弹性部材16の直径よりも小さいことが好ましい。また、弹性部材16の表面積に対する接着剤31の塗布面積は、5~30%が好ましい。

【0034】図3に示すものでは、弹性部材16の軸方向(吸收性物品1の縦方向:Y方向)と直交する方向に振幅側が向けられた波状軌跡となるように、前記接着剤31が塗布されている。例えば、ホットメルト型接着剤のコーナーの微小ノズルを前記Y方向と直交する方向へ往復移動させ、前記弹性部材16をY方向を軸として $\theta_1 - \theta_2$ 方向へ往復回動させながら前記Y方向へ送ることで塗布される。

【0035】あるいは、前記微小ノズルを円運動させながら、前記弹性部材16をY方向を軸として $\theta_1 - \theta_2$ 方向へ往復回動させながら前記Y方向へ送って塗布してもよい。

【0036】次に図4に示す実施の形態では、前記弹性部材16の断面が円形状または楕円形であり、その表面に、ホットメルト型接着剤32が幅寸法 $0 \cdot 05 \sim 0 \cdot 3 \text{ mm}$ の帯状または線状の形態となるように塗布されている。図4では、弹性部材6の表面において、ホットメルト型接着剤32が螺旋軌跡に沿って塗布されている。例えば、ホットメルト型接着剤のコーナーの微小ノズルを固定し、前記弹性部材16をY軸回りに一定方向へ周回させながら前記Y方向へ送ることで、前記螺旋軌跡に沿った塗布が可能である。

【0037】前記図3に示す波状軌跡の周期をP1、図4に示す螺旋軌跡の周期をP2としたときに、 $P1 > W$

で、P2>Wであり、好ましくはP1>2×Wで、P2>2×Wである。また前記P1/W、P2/Wは、2以上で好ましくは3以上で5以下である。例えば、前記Wが1.36mmである場合に、前記P1とP2は5~6mmが好ましく、この場合のP1/W、P2/Wは、3.7~4.4である。

【0038】図3と図4に示すように、前記ホットメルト型接着剤31または32の塗布軌跡が、弹性部材16の縦方向へ連続し、しかもその塗布位置が弹性部材16の周面方向に沿って規則的に変化するものであると、弹性部材16の両側に位置する不織布6、6の凹凸皺7、7の底部7b、7bが、高い確率で前記接着剤31、32により弹性部材16の周面に接着される。

【0039】図5は、図4の実施の形態において、弾性部材16と、これを挟む不織布6、6の凹凸皺7の底部7b、7bとが接着される位置を示している。図5に示すように、不織布6と弾性部材16とを加圧することで、前記底部7bと底部7bは、前記弾性部材16をある程度包み込むようになる。このときの、不織布6と接着剤32との接着剤の接触位置を図4と図5との関連で(i) (ii) (iii) (iv) で示している。すなわち、図4での接着位置(i) (ii) …は、図5に示す接着位置(i) (ii) …に対応している。

【0040】このように、不織布6の凹凸皺7の底部7bは、ある程度高い確率で前記接着剤31または32により弾性部材16に接着されることになる。また、図3と図4の上下から不織布6、6を加圧しても、凹凸皺7の頂部7aおよび中間部7cの内面が前記接着剤31、32と接着する確率が低く、よって不織布6を加圧しても、凹凸皺7が平坦に押しつぶされることはない。よって、図2に示す防漏壁5の装着部分5bが装着者の肌に当たる際、弾性部材16が設けられている部分で不織布6が接着剤で固められることなく、弾性部材16が設けられている部分も凹凸皺7が残り、肌にソフトに当たるようになる。

【0041】また、弹性部材14も図3または図4に示す接着構造と同じ構造で不織布6と接着される。また図2に示すものでは、弹性部材15と17が設けられている部分で、不織布6の凹凸鍔7の無い平坦領域8が前記弹性部材15と17に接着されているが、この弹性部材15と17が設けられている部分においても不織布6に凹凸鍔7を形成しておき、図3または図4に示すのと同

じ接着構造で接着することができる。このようにすると、弹性部材15と17が設けられている部分でも凹凸部7が滑れることがなく、肌への当りがソフトになる。

【0042】また防漏壁5は図2に示すように断面が横向きM形状に限られず、くの字形状やL字形状、あるいは吸収性物品1の表面から斜め上向きに単純に立ち上がる形状であってもよい。

【0043】また、弾性部材の表面での前記接着剤の塗布軌跡は、帯状または線状であって、この帯状または線状が、弾性部材の軸方向へ連続し、しかも弾性部材の表面において軸方向に延びる任意の線を設定したときに、この線状に前記接着剤が間隔を開けて規則的にまたはランダムに現れるような軌跡であればどのようなものであってもよい。

[0044]

【発明の効果】以上のように本発明の吸収性物品では、凹凸皺を有する防漏壁に弹性部材を接着する際に、弹性部材が接着されている部分で前記凹凸皺が潰れて固定されることはなく、肌への接触感が良好になる。

【図面の簡単な説明】

【図1】本発明の吸収性物品の一例を示す斜視図、

【図2】図1のII-II線の断面図、

【図3】図2のIII-III線の断面図、

【図4】他の実施の形態を示すⅢ-Ⅲ線の断面図、

【図5】凹凸部の底部と弾性部材との接着箇所を説明する断面図。

【図6】不織布に凹凸皺を成型する行程を示す斜視図

【符号の説明】

- 1 吸收性物品
 - 5 防漏壁
 - 5 a 自由端
 - 6 不織布
 - 7 凹凸皺
 - 7 a 波の頂部
 - 7 b 波の底部
 - 7 c 波の中間部
 - 1 1 裏面シート
 - 1 2 吸收性コア
 - 1 3 表面シート
 - 1 4, 1 5, 1 6, 1 7 弾性部材

【図1】

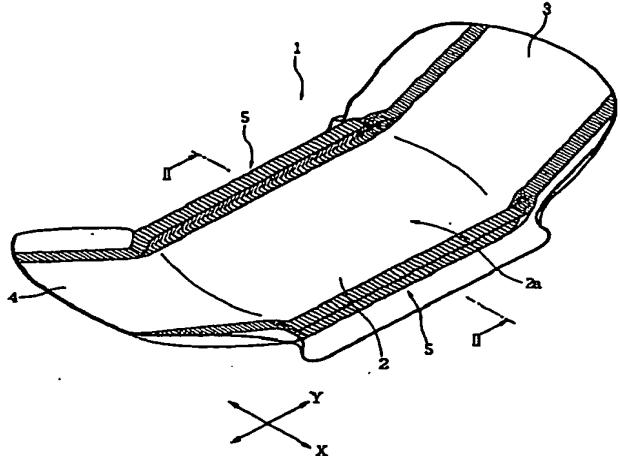


図1

【図2】

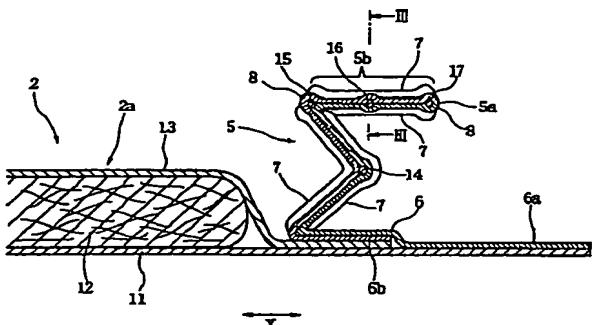
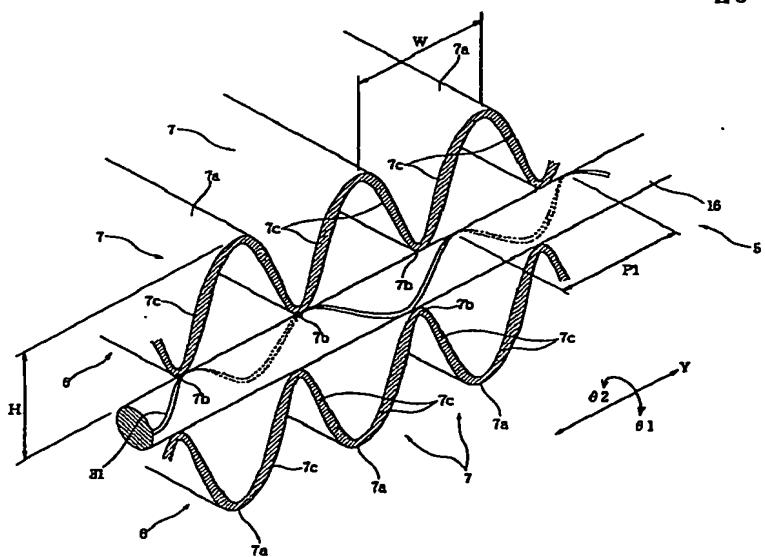
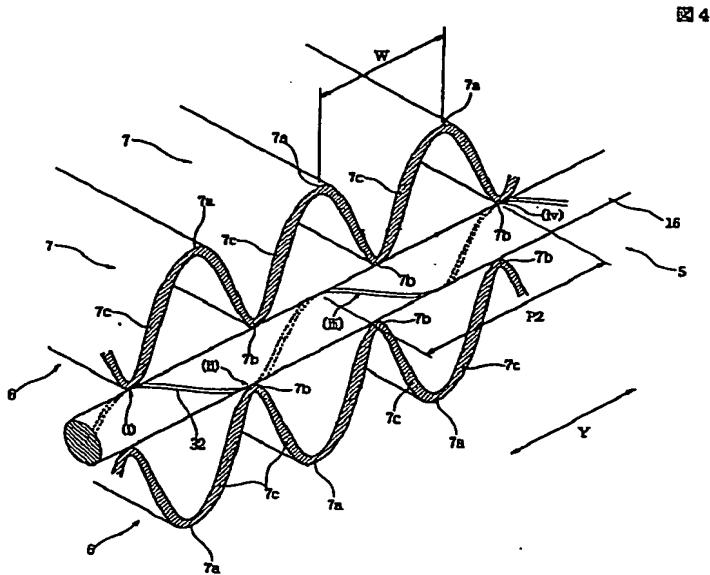


図2

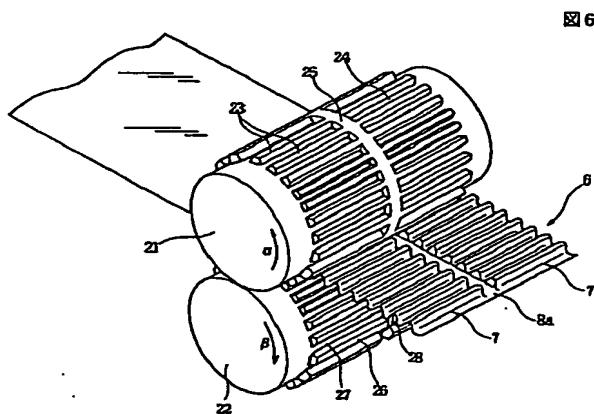
【図3】



[図4]



【図6】



フロントページの続き

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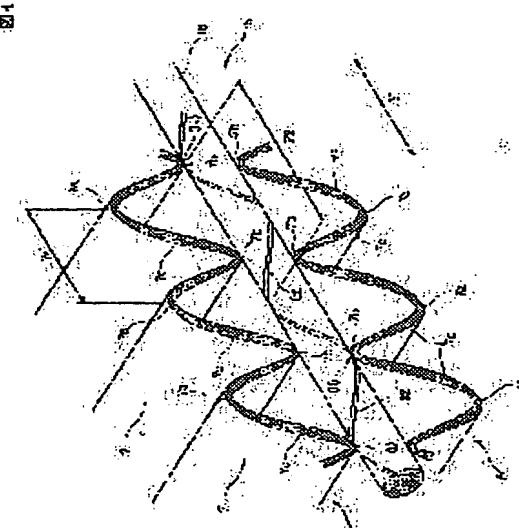
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(54) ABSORPTIVE GOODS

(57)Abstract:

PROBLEM TO BE SOLVED: To solve the problem of conventional absorptive goods that the wall for preventing leakage is formed from the nonwoven fabric which has an uneven crease, an elastic part is attached to this nonwoven fabric, the top and the middle part of the wave is attached to the elastic part, the above-mentioned uneven crease becomes hard with squeezed and therefore, a touch to a skin is hardened.



SOLUTION: The nonwoven fabric 6 which has the wave state uneven crease 7 as the wall for preventing leakage of the absorptive goods. The elastic part 16 is attached to this nonwoven fabric 6. The adhesive 32 is put in a spiral track manner around the elastic part 16. The bottom part 7b of the above-mentioned uneven crease 7 is attached to the surface of the elastic part 16 by the above-mentioned adhesive 32. As the adhesive 32 comes up with space in the direction of the length, the top part 7a of the uneven crease 7 or the inner side of the middle part 7c touch less to the adhesive 32, and therefore there is no possibility that the uneven crease 7 is squeezed and attach-fixed.

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CLAIMS

[Claim(s)]

[Claim 1] In the absorptivity article with which the surface sheet of liquid permeability prepared in the front face by the side of liquid receiving, a rear-face sheet, the absorption layer pinched among said both sheets, the anti-leak barrier prolonged in a lengthwise direction on both sides of said front face, and ** were prepared As for said anti-leak barrier, the crowning and pars basilaris ossis occipitalis of a wave are formed with the wave-like nonwoven fabric repeated by turns to a lengthwise direction. The elastic member which is prolonged in this nonwoven fabric in said lengthwise direction, and demonstrates a shrinkage force to a lengthwise direction is attached. The absorptivity article characterized by for adhesives opening spacing in the front face of said elastic member, applying them to it in said lengthwise direction, and said wave-like pars basilaris ossis occipitalis having pasted said elastic member with said adhesives.

[Claim 2] The spreading gestalt of said adhesives is an absorptivity article according to claim 1 which is band-like or a line, and said adhesives open spacing in shaft orientations at this line, and appears regularly or at random when the line of arbitration by which these band-like or linear adhesives are moreover continuously prolonged in shaft orientations in the front face of an elastic member to the shaft orientations of an elastic member is set up.

[Claim 3] It is the absorptivity article according to claim 2 applied along with the wavelike locus which the direction where said adhesives intersect said lengthwise direction in the front face of said elastic member becomes an amplitude side.

[Claim 4] It is the absorptivity article according to claim 2 applied so that it may become the spiral locus which goes to said lengthwise direction while said adhesives go the perimeter of said elastic member around in the front face of said elastic member.

[Claim 5] An absorptivity component according to claim 3 or 4 with the period of the wavelike locus of said adhesives or the period of said spiral locus longer than the wave-like period of said nonwoven fabric.

[Claim 6] It is the absorptivity article according to claim 1 to 5 which nonwoven fabrics of two sheets with which said nonwoven fabric was turned up at the head of said anti-leak barrier, and said anti-leak barrier was turned up are consisted of, said elastic member was located between the nonwoven fabrics of two sheets, and the pars basilaris ossis occipitalis of the shape of a wave of the nonwoven fabric of the both sides has pasted up on said elastic member with said adhesives, respectively.

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DETAILED DESCRIPTION

[Detailed Description of the Invention]**[0001]**

[Field of the Invention] This invention relates to the absorptivity article with which the anti-leak barrier which starts absorptivity articles, such as a sanitary napkin and a disposable diaper, especially is prolonged on both sides in a lengthwise direction was formed.

[0002]

[Description of the Prior Art] Conventionally, absorptivity articles, such as a sanitary napkin, a urine picking pad, and a disposable diaper, are developed variously. In these absorptivity articles, absorbing elimination liquid certainly in a liquid absorption layer, and making it elimination liquid not leak out of an absorptivity article during wear is called for. Then, there is a thing in which the anti-leak barrier prolonged on both sides in the liquid receiving side front face of an absorptivity article in a lengthwise direction was formed.

[0003] The structure of said conventional anti-leak barrier has that common by which the hydrophobic sheet of the non-elasticity prolonged in a lengthwise direction is joined on the surface sheet of an absorptivity article, and the elastic member prolonged in the lengthwise direction of an absorptivity article was joined to this hydrophobic sheet. While the bow force of going to a lengthwise direction acts on an absorptivity article, said anti-leak barrier starts to the liquid receiving side of an absorptivity article, and enables it to prevent the horizontal leakage of menstrual blood etc. by this by the elastic recoil of the lengthwise direction of said elastic member.

[0004]

[Problem(s) to be Solved by the Invention] However, there is much what has a flat side equivalent to a wearing person's skin, said anti-leak barrier of said conventional absorptivity article has a feeling of adhesion to a wearing person's skin, and its contact feel is hard, and there is much what cannot be equivalent to the skin softly.

[0005] Moreover, there are some which formed the anti-leak barrier with the nonwoven fabric made to deform in the shape of a wave (allocated type), the touch area to a wearing person's skin can fall, and this kind of anti-leak barrier can give a feeling of software to the skin. This kind of anti-leak barrier is indicated by for example, the Patent Publication Heisei No. 503934 [nine to] official report. However, since it is fabricated so that the anti-leak barrier itself may have elastic force, a thing given in said official report has the low rigidity of the anti-leak barrier itself, for example, when it installs so that it may start from the front face of an absorptivity article, it cannot make buckling strength of an anti-leak barrier not much high.

[0006] Moreover, if the elastic member prolonged in a lengthwise direction is joined to the nonwoven fabric made to deform in the shape of a wave (allocated type), the standup force from the liquid receiving side of an absorptivity article will become large, and it will be hard to fall on it. However, if the elastic member prolonged in a lengthwise direction is pasted up on a wave-like nonwoven fabric with the adhesives of a hot melt mold etc., when welding pressure acts on a nonwoven fabric, the crowning side of a wave will paste said adhesives, and it will be easy to be in the condition that the wave of a nonwoven fabric was crushed. Consequently, a nonwoven fabric becomes hard in the part which the elastic member has pasted up, and the contact feel to

the skin worsens.

[0007] This invention solves the above-mentioned conventional technical problem, the hit by the skin can realize a soft anti-leak barrier, and jointing of the nonwoven fabric and elastic member which moreover form an anti-leak barrier aims at offering the absorptivity article which does not spoil a feeling of software by not becoming hard.

[0008]

[Means for Solving the Problem] In the absorptivity article with which the surface sheet of liquid permeability with which this invention was prepared in the front face by the side of liquid receiving, a rear-face sheet, the absorption layer pinched among said both sheets, the anti-leak barrier prolonged in a lengthwise direction on both sides of said front face, and ** were prepared As for said anti-leak barrier, the crowning and pars basilaris ossis occipitalis of a wave are formed with the wave-like nonwoven fabric repeated by turns to a lengthwise direction. The elastic member which is prolonged in this nonwoven fabric in said lengthwise direction, and demonstrates a shrinkage force to a lengthwise direction is attached. Adhesives open spacing in the front face of said elastic member, and are applied to it in said lengthwise direction, and it is characterized by said wave-like pars basilaris ossis occipitalis having pasted said elastic member with said adhesives.

[0009] Since it is that by which the nonwoven fabric which forms said anti-leak barrier is cast by the absorptivity article of this invention in the shape of a wave (allocated type), the touch area to a wearing person's skin can be reduced, there is no feeling of adhesion to the skin, and a hit is soft. Moreover, the shrinkage force to a lengthwise direction acts on an anti-leak barrier, as a result, an absorptivity article curves to a lengthwise direction and said anti-leak barrier becomes easy to take action to join the elastic member which demonstrates a shrinkage force to a lengthwise direction to the anti-leak barrier. And since adhesives are formed [said elastic member] in the lengthwise direction at the intermission, the contact feel [GOWAGOWA / feel / a nonwoven fabric did not become hard with adhesives in the part in which inner surfaces other than the pars basilaris ossis occipitalis of the wave of a nonwoven fabric stop being able to contact said adhesives easily, and a wave cannot be crushed easily, and the elastic member is prepared, and] is not given, and a feeling of software can be maintained.

[0010] Preferably, the spreading gestalt of said adhesives is band-like or a line, and when the line of arbitration by which these band-like or linear adhesives are moreover continuously prolonged in shaft orientations in the front face of an elastic member to the shaft orientations of an elastic member is set up, said adhesives open spacing in shaft orientations at this line, and it appears regularly or at random.

[0011] For example, in the front face of said elastic member, said adhesives are applied along with the wavelike locus which the direction which intersects said lengthwise direction becomes an amplitude side. Or in the front face of said elastic member, going the perimeter of said elastic member around, said adhesives are applied so that it may become the spiral locus which goes to said lengthwise direction.

[0012] Moreover, the period of the wavelike locus of said adhesives or the period of a ***** of said spiral locus is more desirable than the wave-like period of said nonwoven fabric.

[0013] With the above-mentioned means, by making fine the pitch of the wave of the nonwoven fabric which forms an anti-leak barrier, an anti-leak barrier can be done in elasticity and, moreover, the hit by the skin can be made soft. In this case, if the spreading period of adhesives is lengthened, parts other than the pars basilaris ossis occipitalis of the wave of said nonwoven fabric can make low the probability to hit adhesives, and can make the crushing prevention effectiveness of a wave high. Moreover, each pars basilaris ossis occipitalis of a nonwoven fabric can be pasted up on an elastic member with adhesives by the high probability.

[0014] Furthermore, it consists of nonwoven fabrics of two sheets with which said nonwoven fabric was turned up at the head of said anti-leak barrier, and said anti-leak barrier was turned up, and said elastic member was located between the nonwoven fabrics of two sheets, and the pars basilaris ossis occipitalis of the shape of a wave of the nonwoven fabric of the both sides has pasted it up on said elastic member with said adhesives, respectively.

[0015] In addition, the anti-leak barrier was formed with the nonwoven fabric of the shape of a

wave of one sheet, and the elastic member may paste up this invention on the pars basilaris ossis occipitalis of the wave of this nonwoven fabric.

[0016]

[Embodiment of the Invention] The perspective view in which drawing 1 shows a sanitary napkin as an example of the absorptivity article of this invention, the sectional view where drawing 2 shows the fragmentary sectional view, drawing 3, and drawing 4 of an II-II line of drawing 1 according to the gestalt of operation of the cross section of the III-III line of drawing 2, the sectional view where drawing 5 explains the adhesion part of an elastic member and a nonwoven fabric, and drawing 6 are the perspective views showing an example of the production process of the nonwoven fabric which forms an anti-leak barrier.

[0017] The absorptivity article 1 shown in drawing 1 is a sanitary napkin, the direction of X is the cross direction and the direction of Y is a lengthwise direction. The fields where this absorptivity article 1 faces across said center section 2 are the front section 3 and the back section 4. The anti-leak barriers 5 and 5 prolonged in a lengthwise direction (the direction of Y) are formed in the both-sides section of the absorptivity article 1. The elastic member which demonstrates elastic recoil is attached in the lengthwise direction at these anti-leak barriers 5 and 5, and the absorptivity article 1 curves toward a lengthwise direction (the direction of Y) by this elastic recoil, and the anti-leak barriers 5 and 5 of both sides mainly start in a solid configuration from surface 2a in said center section 2.

[0018] As shown in drawing 2, the absorptivity core 12 piled up the absorptivity article 1 on the rear-face sheet 11 of non-liquid-permeable nature, and the liquid permeability surface sheet 13 has piled it up on it. Said absorptivity core 12 is formed over a part of said front section 3 and back section 4 from the center section 2 of the absorptivity article 1. And said rear-face sheet 11 and surface sheet 13 are a periphery field outside said absorptivity core 12, it pastes up with hot melt adhesive mutually, or welding junction of them is carried out by heat embossing.

[0019] Said absorptivity core 12 is the nonwoven fabric which made the subject the thing which grinding pulp and SAP were mixed and was wrapped in the paper of further liquid permeability, the air RAID pulp sheet-ized by binder processing, an absorbent paper, or hydrophilic fiber. Said rear-face sheet 11 is non-liquid permeability, and a resin film, a nonwoven fabric, or the resin film and nonwoven fabric of moisture permeability are joined. Said surface sheet 13 is liquid permeability, and is formed with the lamination sheet of the nonwoven fabric or the opening nonwoven fabric, the opening plastic film or opening plastic film, and nonwoven fabric which were formed of hydrophilic fiber etc.

[0020] Said anti-leak barrier 5 is formed with the nonwoven fabrics 6, such as an Ayr through nonwoven fabric, a point bond nonwoven fabric, a span bond nonwoven fabric, a span ball-race nonwoven fabric, a melt BURON nonwoven fabric, and an air RAID nonwoven fabric. Moreover, an anti-leak barrier 5 may be formed with plastic sheets, such as ethylene and polypropylene, the sheet which laminated the nonwoven fabric. It is desirable that all are hydrophobicity or waterproofed characteristics. The fiber which constitutes said nonwoven fabric 6 is formed for bicomponent fibers, i.e., the sheath-core mold fiber, such as polyethylene (PE) fiber, polyethylene terephthalate (PET) fiber, PE/PP, or PE/PET, side-by-side mold fiber, etc. to which ***** was given. Preferably, said anti-leak barrier 5 is formed with the span bond nonwoven fabric 6 with which fineness was formed for PE / PP sheath-core mold fiber of 1.1 – 4.4dtex, and a superintendent officer is 15 – 40 g/m².

[0021] The wave-like concavo-convex wrinkle 7 is formed in said nonwoven fabric 6 which forms an anti-leak barrier 5, and with the anti-leak barrier 5, it is formed in it so that the crowning and pars basilaris ossis occipitalis of a wave of said concavo-convex wrinkle 7 may repeat by turns to a lengthwise direction (the direction of Y).

[0022] Drawing 6 is the explanatory view of the heat press process for forming wave-like the concavo-convex wrinkle 7 and the flat field 8 in the nonwoven fabric 6 which forms said anti-leak barrier 5.

[0023] The heat press of said nonwoven fabric 6 is inserted and carried out with forming rolls 21 and 22 at this heat press process. Forming rolls 21 and 22 rotate in the direction of alpha, and the direction of beta in the condition of having geared mutually. The shaping rib 23 and slot 24 of

the letter of stripe embossing where the shaping side of a forming roll 21 extends in the shaft orientations of a roll are repeatedly formed in the hand of cut (the direction of alpha) in the fixed pitch. Moreover, the convex peripheral surface 25 which follows the top face of said shaping rib 23 in succession to a hand of cut (the direction of alpha) is formed in the forming roll 21.

[0024] In respect of shaping of the forming roll 22 of another side, the shaping rib 26 and slot 27 of the letter of stripe embossing which extend in the shaft orientations of a roll are repeatedly formed in the hand of cut (the direction of beta) in the fixed pitch. Moreover, the concave peripheral surface 28 which follows the pars basilaris ossis occipitalis of a slot 27 is continuously formed in the forming roll 22 along the hand of cut (the direction of beta).

[0025] If a forming roll 21 and a forming roll 22 get into gear and rotate while a nonwoven fabric 6 is supplied between rolls, the shaping ribs 23 and 26 will get into gear so that the shaping rib 26 of a forming roll 22 may enter [the shaping rib 23 of a forming roll 21] in the slot 27 of a forming roll 22 in the slot 24 of a forming roll 21. At this time, the convex peripheral surface 25 of a forming roll 21 bites in the concave peripheral surface 28 of a forming roll 22.

[0026] Of this continuation molding, wave-like the concavo-convex wrinkle 7 and the flat field 8 are simultaneously formed in a nonwoven fabric 6. To be shown in drawing 3 and drawing 4, fiber is strongly compressed by wave-like top 7a and pars-basilaris-ossis-occipitalis 7b of the concavo-convex wrinkle 7, and, as for the nonwoven fabric 6 after molding, fiber is lightly compressed by pars intermedia 7c. Moreover, the consistency of top 7a and pars-basilaris-ossis-occipitalis 7b becomes higher than the consistency of pars intermedia 7c. The consistency in said crownings 7a and 7b has three or more desirable 0.1 g/cm. Moreover, desirable upper limits are three or less 1.0 g/cm.

[0027] The height dimension H between the sheet front face in 0.5–3.0mm and top 7a and the sheet rear face in pars-basilaris-ossis-occipitalis 7b has [the concavo-convex wrinkle 7 of the nonwoven fabric 6 formed in the shape of a wave / the distance W during the middle point of top 7a which adjoins the middle point of said top 7a (wave-like period)] 0.1–0.5 desirablemm.

[0028] As shown in drawing 2, the nonwoven fabric 6 which has the wave-like concavo-convex wrinkle 7 is folded in half and used in free-end 5a of an anti-leak barrier 5. And elastic members 14, 15, 16, and 17 are pinched between the nonwoven fabrics 6 folded in half. Moreover, one side edge section 6a of said nonwoven fabric 6 is the both-sides section of the absorptivity article 1, the top face of said rear-face sheet 11 is pasted, and adhesion immobilization of the side edge section 6b of another side is carried out between said side edge section 6a and said surface sheets 13.

[0029] Foam and natural rubber of the shape of polyurethane elastic yarn, the shaping film which made SEBS the subject, and yarn can be used for said elastic members 14, 15, 16, and 17.

[0030] For example, where each elastic members 14, 15, 16, and 17 are extended 1.3 times, as elastic members 14, 15, 16, and 17 are pinched with said each nonwoven fabric 6 folded in half, a nonwoven fabric 6 and elastic members 14, 15, 16, and 17 are pasted up in the direction (lengthwise direction) where a wave is located in a line in the nonwoven fabric 6 formed in the shape of [said] a wave.

[0031] In the example shown in drawing 2, an elastic member 14 is located in the middle of the standup part of an anti-leak barrier 5, an elastic member 15 is located in the bending section on it, an elastic member 17 is located in free-end 5a, and the elastic member 16 is located between an elastic member 15 and an elastic member 17. The flat part in which said elastic members 15, 16, and 17 are attached is wearing partial 5b which is mainly equivalent to a wearing person's skin. Moreover, in the part in which the elastic member 15 and the elastic member 17 are formed, the flat field 8 of the nonwoven fabric 6 shown in drawing 6 has pasted said elastic member 15 and elastic member 16 with hot melt adhesive etc., a nonwoven fabric 6 tends to bend in the part in which the elastic member 15 is formed, and it is easy to fold up a nonwoven fabric 6 to two in free-end 5a in which the elastic member 17 is formed.

[0032] Moreover, said elastic member 14 and elastic member 16 are pasted up with this nonwoven fabric 6 in the part in which the concavo-convex wrinkle 7 of the shape of a wave of a nonwoven fabric 6 is formed.

[0033] Drawing 3 and drawing 4 are the sectional views of the III-III line of drawing 2. With the

gestalt of operation shown in drawing 3, cross sections are wire rods, such as circular or an ellipse form, and said elastic member 16 is applied so that hot melt adhesive 31 may serve as a band-like or linear gestalt on the front face. As for the width method of said hot melt adhesive 31, it is desirable that it is smaller than the diameter of an elastic member 16. Moreover, 5 – 30% of the spreading area of the adhesives 31 to the surface area of an elastic member 16 is desirable.

[0034] In what is shown in drawing 3, said adhesives 31 are applied so that it may become the wavelike locus by which the amplitude side was turned in the direction which intersects perpendicularly with the shaft orientations (the lengthwise direction of the absorptivity article 1: the direction of Y) of an elastic member 16. For example, it is applied by sending in said direction of Y, carrying out both-way migration of the minute nozzle of the coater of hot melt adhesive in said direction of Y, and the direction which intersects perpendicularly, and carrying out both-way rotation of said elastic member 16 to a theta1–theta 2-way centering on the direction of Y.

[0035] Or you may send and apply in said direction of Y, carrying out both-way rotation of said elastic member 16 to a theta1–theta 2-way centering on the direction of Y, carrying out the circular motion of said minute nozzle.

[0036] Next, with the gestalt of operation shown in drawing 4, the cross section of said elastic member 16 is a circle configuration or an ellipse form place, and it is applied to the front face so that hot melt adhesive 32 may serve as a band-like or linear gestalt which is the width-of-face dimension of 0.05–0.3mm. In drawing 4, hot melt adhesive 32 is applied along with the spiral locus in the front face of an elastic member 6. For example, spreading which met said spiral locus by sending in said direction of Y, fixing the minute nozzle of the coater of hot melt adhesive, and making said elastic member 16 go around in the fixed direction to the circumference of a Y-axis is possible.

[0037] When the period of the spiral locus which shows the period of a wavelike locus shown in said drawing 3 to P1 and drawing 4 R>4 is set to P2, it is P1>W, is P2>W, is P1>2xW preferably, and is P2>2xW. Moreover, said P1/P2 [W and]/W is five or less or more in three preferably two or more. For example, when said W is 1.36mm, said P1 and P2 have 5–6 desirablemm, and P1 in this case/P2 [W and]/W is 3.7–4.4.

[0038] As shown in drawing 3 and drawing 4, the partes basilaris ossis occipitalis 7b and 7b of the concavo-convex wrinkles 7 and 7 of nonwoven fabrics 6 and 6 located in the both sides of an elastic member 16 as the spreading locus of said hot melt adhesives 31 or 32 is that from which the spreading location moreover changes to the lengthwise direction of an elastic member 16 regularly along the direction of a peripheral surface of an elastic member 16 continuously paste the peripheral surface of an elastic member 16 with said adhesives 31 and 32 by the high probability.

[0039] Drawing 5 shows the location which an elastic member 16 and the partes basilaris ossis occipitalis 7b and 7b of the concavo-convex wrinkle 7 of the nonwoven fabrics 6 and 6 which sandwich this paste up in the gestalt of operation of drawing 4. As shown in drawing 5, said pars-basilaris-ossis-occipitalis 7b and pars-basilaris-ossis-occipitalis 7b come to wrap said elastic member 16 in pressurizing a nonwoven fabric 6 and an elastic member 16 to some extent. (i), (ii) (iii), and (iv) show the contact location of the adhesives of the nonwoven fabric 6 and adhesives 32 at this time in connection with drawing 4 and drawing 5. That is, the adhesion location (i) in drawing 4 and (ii) — support the adhesion location (i) shown in drawing 5, and (ii) –.

[0040] Thus, pars-basilaris-ossis-occipitalis 7b of the concavo-convex wrinkle 7 of a nonwoven fabric 6 will be pasted up on an elastic member 16 with said adhesives 31 or 32 by the to some extent high probability. Moreover, even if the probability for the inner surface of top 7a of the concavo-convex wrinkle 7 and pars intermedia 7c to paste up with said adhesives 31 and 32 even if it pressurizes nonwoven fabrics 6 and 6 from the upper and lower sides of drawing 3 and drawing 4 is low and therefore pressurizes a nonwoven fabric 6, the concavo-convex wrinkle 7 is not crushed evenly. Therefore, in case wearing partial 5b of the anti-leak barrier 5 shown in drawing 2 is equivalent to a wearing person's skin, the concavo-convex wrinkle 7 remains and the part in which a nonwoven fabric 6 is not hardened with adhesives by the part in which the

elastic member 16 is formed, and the elastic member 16 is formed also comes to hit software at the skin.

[0041] Moreover, it pastes up with a nonwoven fabric 6 with the same structure as the bonded structure which also shows an elastic member 14 to drawing 3 or drawing 4. Moreover, although the flat field 8 without the concavo-convex wrinkle 7 of a nonwoven fabric 6 has pasted said elastic members 15 and 17 in the part in which elastic members 15 and 17 are formed what is shown in drawing 2 R> 2, the concavo-convex wrinkle 7 is formed in the nonwoven fabric 6 also in the part in which these elastic members 15 and 17 are formed, and it can paste up by the same bonded structure as being shown in drawing 3 or drawing 4. If it does in this way, the concavo-convex wrinkle 7 will not be crushed by the part in which elastic members 15 and 17 are formed, either, and the hit by the skin will become software.

[0042] Moreover, as shown in drawing 2, a cross section may not be restricted to a sideways M configuration, but an anti-leak barrier 5 may be the shape of a typeface of **, a L character configuration, or a configuration that starts from the front face of the absorptivity article 1 to slanting facing up simply.

[0043] Moreover, the spreading locus of said adhesives in the front face of an elastic member may be band-like or a line, and when this band-like or line sets the line of the arbitration moreover continuously prolonged in shaft orientations in the front face of an elastic member to the shaft orientations of an elastic member, as long as it is a locus which said adhesives open spacing in this line, and appears regularly or at random, it may be what kind of thing.

[0044]

[Effect of the Invention] As mentioned above, in the absorptivity articles of this invention, in case an elastic member is pasted up on the anti-leak barrier which has a concavo-convex wrinkle, in the part which the elastic member has pasted up, said concavo-convex wrinkle is crushed, and is not fixed, and a feeling of contact to the skin becomes good.

[Translation done.]

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DESCRIPTION OF DRAWINGS

[Brief Description of the Drawings]

[Drawing 1] The perspective view showing an example of the absorptivity article of this invention,

[Drawing 2] The sectional view of the II-II line of drawing 1,

[Drawing 3] The sectional view of the III-III line of drawing 2,

[Drawing 4] The sectional view of an III-III line showing the gestalt of other operations,

[Drawing 5] The sectional view explaining the adhesion part of the pars basilaris ossis occipitalis of a concavo-convex wrinkle, and an elastic member,

[Drawing 6] The perspective view showing the stroke which casts a concavo-convex wrinkle in a nonwoven fabric,

[Description of Notations]

1 Absorptivity Article

5 Anti-leak Barrier

5a Free end

6 Nonwoven Fabric

7 Concavo-convex Wrinkle

7a The crowning of a wave

7b The pars basilaris ossis occipitalis of a wave

7c Pars intermedia of a wave

11 Rear-Face Sheet

12 Absorptivity Core

13 Surface Sheet

14, 15, 16, 17 Elastic member

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DRAWINGS

[Drawing 1]

図1

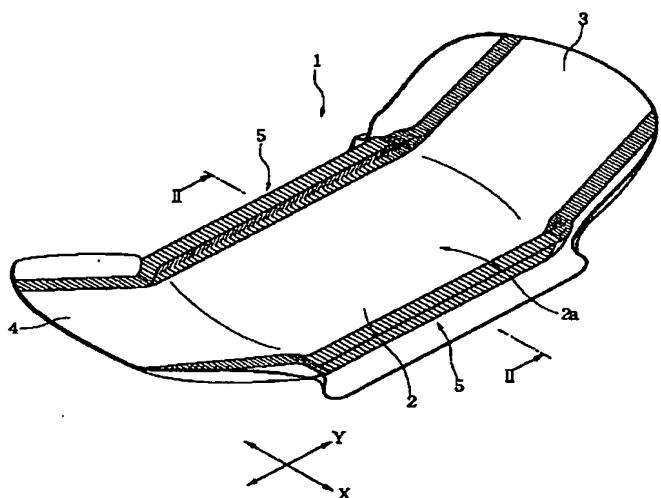
**[Drawing 2]**

図2

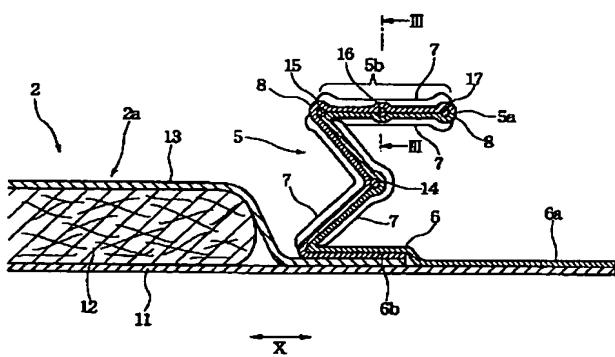
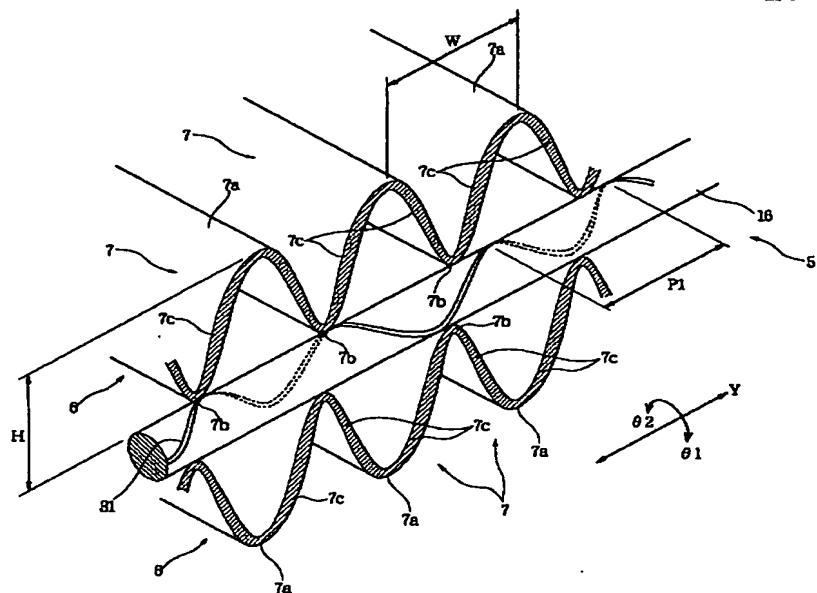
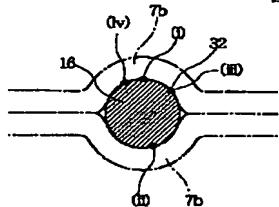
**[Drawing 3]**

図 3



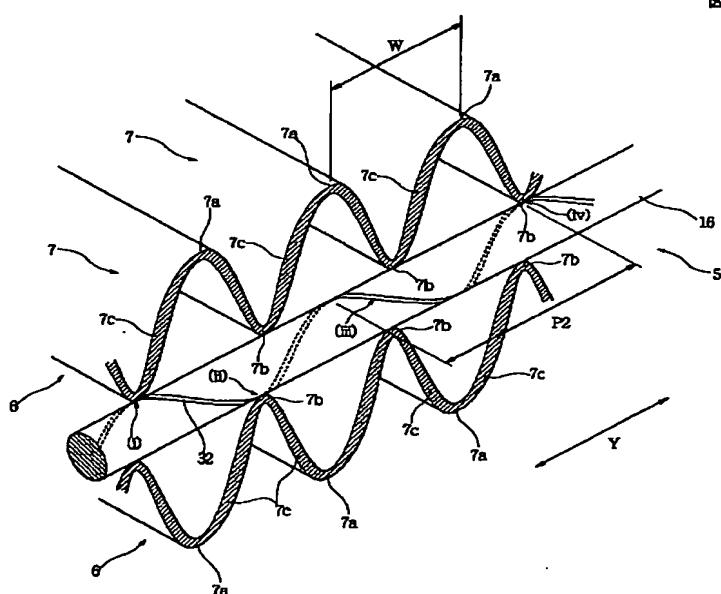
[Drawing 5]

図 5

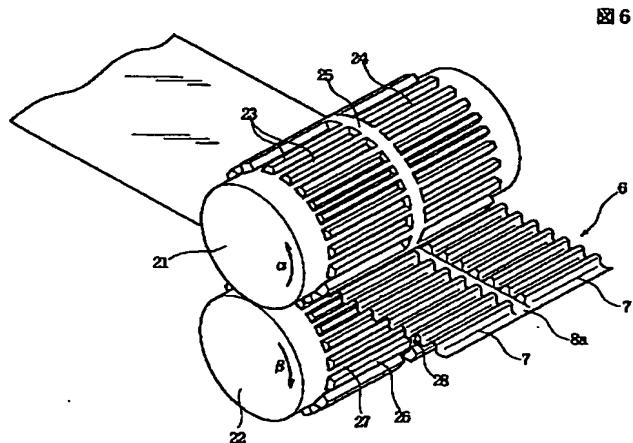


[Drawing 4]

図 4



[Drawing 6]



[Translation done.]